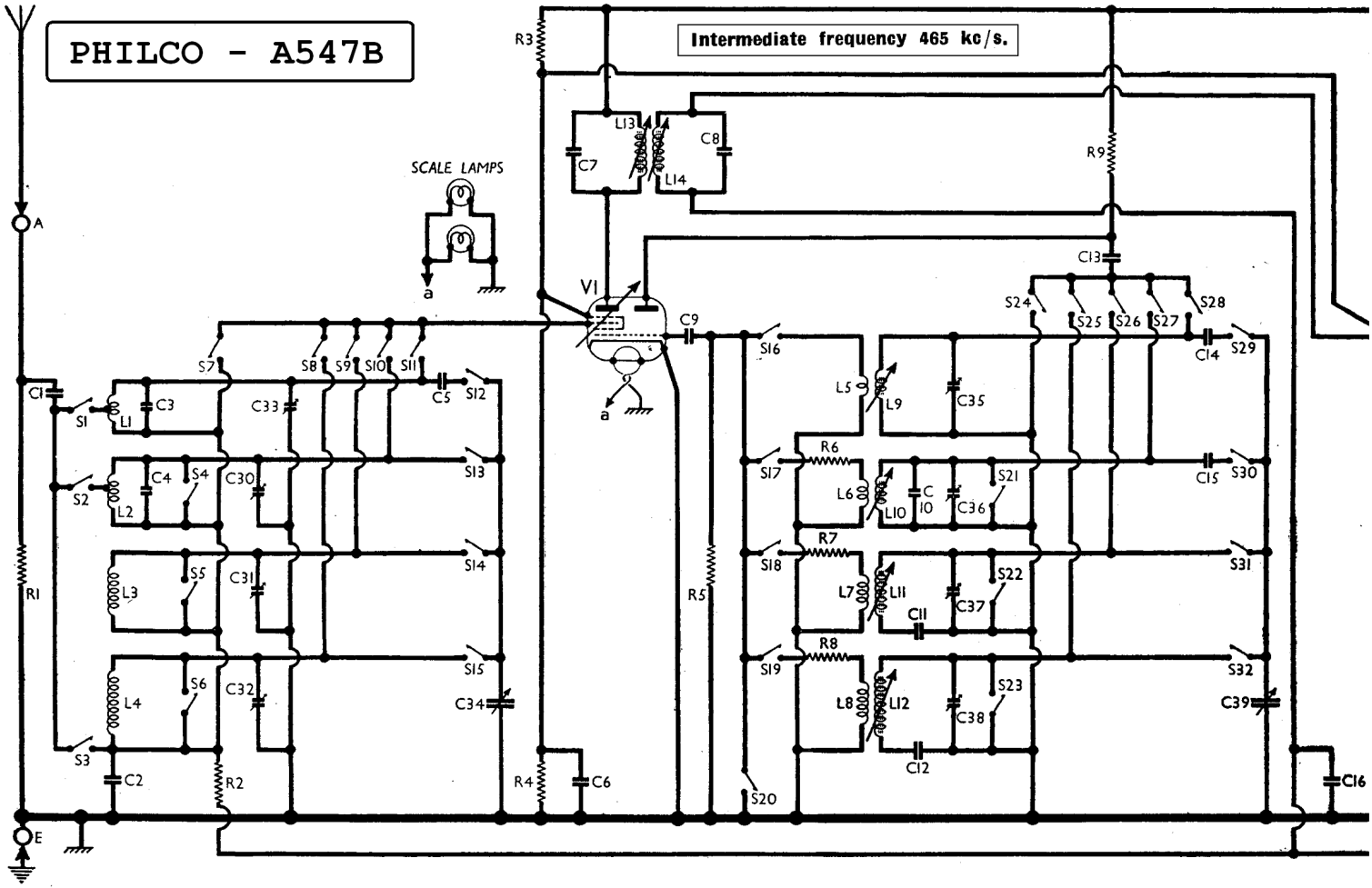
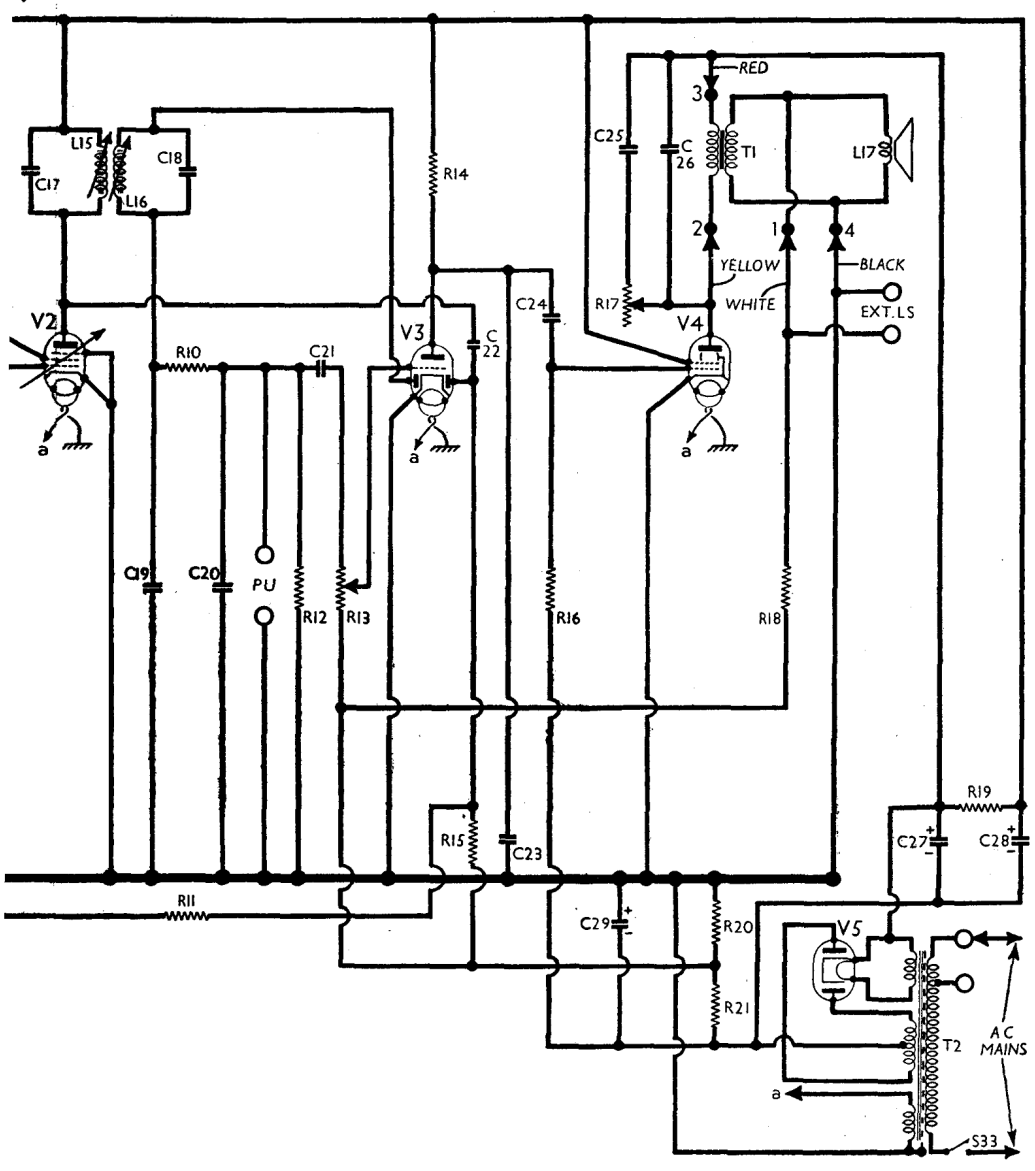
PHILCO - A547B





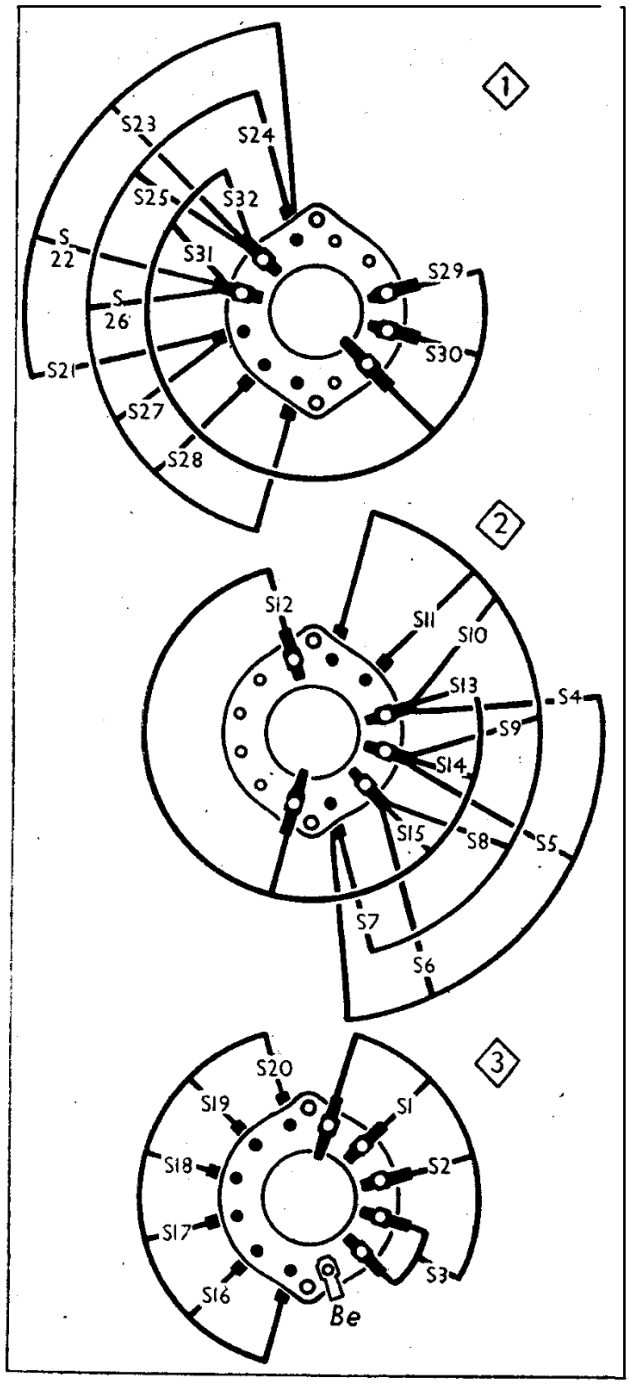
	CAPACITORS	Values (μF)	Locations
C1	Aerial coupling capacitors	0·001	K6
C2		0·0025	L4
C3	Aerial S.W.2 trim.	0·000022	L6
C4	Aerial S.W.1 trim.	0·000022	L4
C5	Aerial S.W.2 track.	0·00033	K4
C6	S.G.'s decoupling ...	0·1	L6
C7	1st I.F. transformer tuning	0·0001	A3
C8		0·0001	A3
C9	V1 osc. C.G. ...	0·0001	K6
C10	Osc. S.W.1 trim....	0·000022	J6
C11	Osc. M.W. track. ...	0·000374	J4
C12	Osc. L.W. track. ...	0·000104	J5
C13	Osc. anode coup. ...	0·0001	L5
C14	Osc. S.W.2 track....	0·000293	K4
C15	Osc. S.W.1 track....	0·0018	K4
C16	A.G.C. decoupling	0·1	H6
C17	2nd I.F. transformer tuning	0·0001	B3
C18		0·0001	B3
C19	I.F. by-pass capacitors	0·0001	B3
C20		0·0001	B3
C21	A.F. coupling ...	0·01	G5
C22	A.G.C. coupling ...	0·000047	H6
C23	I.F. by-pass ...	0·0001	H5
C24	A.F. coupling ...	0·001	G5
C25	Part tone control...	0·05	F4
C26	Tone corrector ...	0·005	F5
C27*	H.T. smoothing capacitors ...	30·0	D1
C28*		30·0	D1
C29*	G.B. by-pass ...	25·0	F4
C30‡	Aerial S.W.1 trim.	0·00005	L4
C31‡	Aerial M.W. trim....	0·00005	L5
C32‡	Aerial L.W. trim....	0·00005	L5
C33‡	Aerial S.W.2 trim.	0·00005	L5
C34†	Aerial tuning ...	0·000443§	A2
C35‡	Osc. S.W.2 trim. ...	0·00005	J4
C36‡	Osc. S.W.1 trim. ...	0·00005	J5
C37‡	Osc. M.W. trim. ...	0·00005	J5
C38‡	Osc. L.W. trim. ...	0·00005	J5
C39†	Oscillator tuning ...	0·000443§	A1

* Electrolytic. † Variable. ‡ Pre-set.
§ "Swing" value. min. to max.

	RESISTORS	Values (ohms)	Locations
R1	Aerial shunt ...	10,000	K6
R2	V1 A.G.C. decoup.	33,000	K6
R3	V1, V2 S.G.'s H.T. potential divider	12,000	H4
R4		68,000	J6
R5	V1 osc. C.G. ...	47,000	L6
R6	Oscillator stabilizing resistors ...	68	K5
R7		2,200	K5
R8		8,200	K5
R9	Osc. anode load ...	33,000	K6
R10	I.F. stopper ...	47,000	B3
R11	A.G.C. decoupling	1,000,000	H6
R12	Sig. diode load ...	220,000	G6
R13	Volume control ...	1,000,000	G4
R14	V3 triode load ...	220,000	H5
R15	A.G.C. diode load...	1,000,000	H5
R16	V4 C.G. resistor ...	470,000	G5
R17	Tone control ...	50,000	E4
R18	F.-B. series ...	220	G6
R19	H.T. smoothing ...	4,300	G4
R20	V1-V4 G.B., and A.G.C. delay resistors	33	H5
R21		180	G4

Switch	Gram.	L.W.	M.W.	S.W.1	S.W.2
S1	—	—	—	—	C
S2	—	—	—	C	—
S3	—	C	C	—	—
S4	—	—	—	—	C
S5	—	—	—	C	—
S6	—	—	C	—	—
S7	C	—	—	—	—
S8	—	C	—	—	—
S9	—	—	C	—	—
S10	—	—	—	C	—
S11	—	—	—	—	C
S12	—	—	—	—	C
S13	—	—	—	C	—
S14	—	—	C	—	—
S15	—	C	—	—	—
S16	—	—	—	—	C
S17	—	—	—	C	—
S18	—	—	C	—	—
S19	—	C	—	—	—
S20	C	—	—	—	—
S21	—	—	—	—	C
S22	—	—	—	C	—
S23	—	—	C	—	—
S24	C	—	—	—	—
S25	—	C	—	—	—
S26	—	—	C	—	—
S27	—	—	—	C	—
S28	—	—	—	—	C
S29	—	—	—	—	C
S30	—	—	—	C	—
S31	—	—	C	—	—
S32	—	C	—	—	—

OTHER COMPONENTS			Approx. Values (ohms)	Locations
L1	Aerial tuning coils		Very low	L5
L2			Very low	L5
L3			3·3	L4
L4			45·0	L4
L5	Oscillator reaction coils		Very low	J4
L6			0·4	J5
L7			2·5	J4
L8			5·5	J5
L9	Oscillator tuning coils		Very low	J4
L10			Very low	J5
L11			6·6	J4
L12			16·0	J5
L13	1st I.F. trans.	Pri. ...	8·0	A3
L14		Sec. ...	8·0	A3
L15	2nd I.F. trans.	Pri. ...	8·0	B3
L16		Sec. ...	8·0	B3
L17	Speech coil ...		2·0	B1
T1	Speaker trans.	Pri. ...	620·0	B2
		Sec. ...	0·1	B2
T2	Mains trans.	Pri., total	31·0	D2
		Rect. heat. sec. ...	Very low	D2
		H.T. sec., total	720·0	D2
		Heat. sec.	Very low	D2
S1-S32	W/band and gram. switches ...		—	—
S33	Mains sw., g'd R17		—	E4



Diagrams of the three waveband switch units, drawn as seen from the rear of an inverted chassis. In some cases tags are connected to their opposite numbers on the reverse side of the unit, the pair being used as one side of three separate switches. The associated table appears on the left, in col. 2.

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 6K8G	195	2·8	93	4·9
	Oscillator			
	80	2·6		
V2 6K7GT	195	8·6	93	2·0
V3 6Q7G	78	0·4	—	—
V4 6V6G	265	26·0	195	1·3
V5 R52	250†	—	—	—

† Each anode, A.C.

PHILCO - A547B

PHILCO - A547B

DRIVE CORD REPLACEMENT

Two separate cords are used in the tuning drive on this receiver : one from the tuning control spindle to the gang drive drum (gang drive cord), and one from the gang drive drum to the cursor above the speaker (cursor drive cord).

The two cords are shown in our sketch below, the gang drive cord being drawn in broken line to distinguish it from the other. The cord used is Nylon braided glass yarn, and suitable lengths for the job are 24 inches for the gang drive and 50 inches for the cursor drive cord. This leaves ample for tying off.

In running each cord, one end is tied to its associated tension spring, which is then hooked to its anchor hole. The cord is then run round its course, commencing in the clockwise direction round the drive drum, with the gang at maximum so that the stop takes the pull of the cord, then finally tied off again at the same place as it started, making a complete loop of each cord. The spring may be unhooked for this operation.

The only points worthy of note are that the gang drive cord should run on the rear side of the flat groove round the gang drive drum, with the cursor cord in front of it, so that the gang drive should be fitted first; and that when slipping the cord into the grip on the cursor, take care to use the truly horizontal (upper) run of cord for it, and note that this runs over the front pulley on the right of the scale. This is clearly shown in our sketch. The cursor may be adjusted as explained under "Circuit Alignment."

CIRCUIT ALIGNMENT

The chassis must be in position in the cabinet when carrying out these operations.

I.F. Stages.—Switch set to M.W., tune to 200 m on scale, turn volume control to maximum, and connect signal generator, via an 0.1 μF capacitor in the "live" lead, to control grid (top cap) of **V1** and the **E** socket. Feed in a 465 kc/s (645.16 m) signal, and adjust the cores of **L16, L15, L14** and **L13** (location references B3, A3) for maximum output. Repeat these operations until no improvement results.

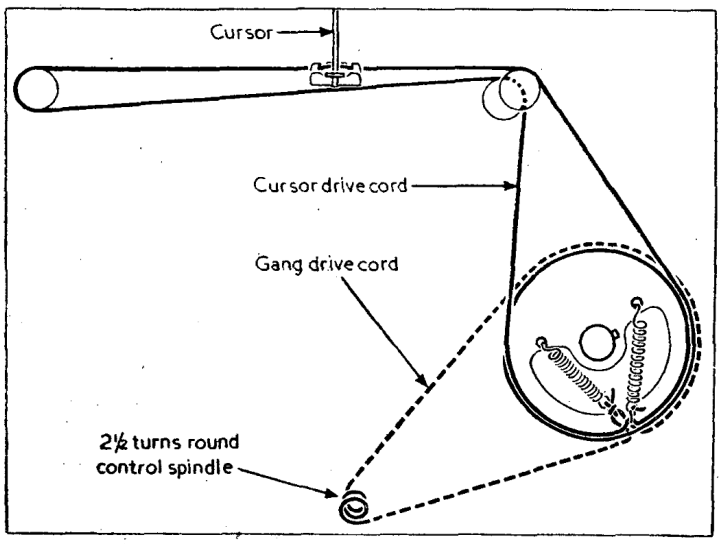
R.F. and Oscillator Stages.—With the gang at maximum capacitance, the cursor should be coincident with the high wavelength ends of the three scales. It may be adjusted in position by sliding the cursor carriage along the drive cord in the required direction. Transfer "live" signal generator lead, via a suitable dummy aerial, to **A** socket.

L.W.—Switch set to L.W., tune to 857 m (spot on scale), feed in an 857 m (350 kc/s) signal, and adjust **C38** (B2) and **C32** (A2) for maximum output. Tune to 1,875 m (spot on scale), feed in a 1,875 m (160 kc/s) signal, and adjust the core of **L12** (B2) for maximum output. Repeat these operations until no improvement results.

M.W.—Switch set to M.W., tune to 214 m (spot on scale), feed in a 214 m (1,400 kc/s) signal, and adjust **C37** (B2) and **C31** (A2) for maximum output. Tune to 500 m (spot on scale), feed in a 500 m (600 kc/s) signal, and adjust the core of **L11** (B2) for maximum output. Repeat these operations until no improvement results.

S.W.1.—Switch set to S.W.1 as marked on waveband indicator, tune to 13 Mc/s (spot on scale), feed in a 13 Mc/s (23.08 m) signal, and adjust **C36** (B2) for maximum output. Tune to 12.07 Mc/s on scale and check that the image signal appears and then re-tune to 13 Mc/s on scale and adjust **C30** (A2), while rocking the gang, for maximum output. Tune to 6 Mc/s (spot on scale), feed in a 6 Mc/s (50 m) signal, and adjust the core of **L10** (B2) for maximum output. Repeat these operations until no improvement results.

S.W.2.—Switch set to S.W.2 as marked on waveband indicator, tune to 21 Mc/s (spot on scale), feed in a 21 Mc/s (14.29 m) signal, and adjust **C35** (B2) for maximum output. Tune to 20.07 Mc/s on scale and check that the image signal appears and then re-tune to 21 Mc/s on scale and adjust **C33** (A2), while rocking the gang, for maximum output. Tune to 13 Mc/s (spot on scale), feed in a 13 Mc/s (23.08 m) signal, and adjust the core of **L9** (B1) for maximum output. Repeat these operations until no improvement results.



Sketch showing the tuning drive system, involving two separate cords. The main drive cord is shown in broken line, to distinguish it from the cursor drive cord, which is drawn in solid line. The drive is viewed from the front.